

## ABSTRACT

Disclosed is an apparatus for providing transparent fault protection for redundant server systems comprising a plurality of servers connected to a plurality of clients over a network. One or more servers are configured in a master and back-up configurations. Each server operates independently from the other and each server is connected to the network using an identical address so that each master and back-up server receives the same client communications. Each server runs the same copy of operating system, server application system and fail over protection system programs. The invention provides for a method of transparent fail over protection between the master and the back-up servers by synchronizing the operation of the master with the back-up. Synchronization is accomplished by synchronizing the initial state of the operating system by ensuring that the respective master and back-up operating systems are using the same file systems. Synchronization of the servers also necessitates synchronization of the application states of the respective master and back-up server application programs and synchronization of the respective network connection states between the master and back-up servers and the network respectively. Once synchronization is achieved, the fail over between master and back-up servers will be transparent to the client.